

1 ABSTRACT OF THE DISCLOSURE

A projection exposure apparatus has an illumination optical system for illuminating a mask, on which a predetermined pattern is formed, with light from a light source, a projection optical system for forming an image of the pattern of the mask on a photosensitive substrate, a mask stage for holding the mask and moving the mask within a plane perpendicular to the optical axis of the projection optical system, a substrate stage for moving the photosensitive substrate within a plane conjugate to the plane with respect to the projection optical system, and an imaging characteristic correction system for correcting an imaging characteristic of the projection optical system. The apparatus synchronously moves the mask and the photosensitive substrate along the optical axis of the projection optical system so as to expose the entire pattern surface of the mask. The apparatus includes an incident light intensity input system for inputting the intensity of the illumination light, which is incident on the projection optical system through the mask, in accordance with the position of the mask, and an imaging characteristic calculation device for calculating a variation in imaging characteristic of the projection optical system on the basis of information from the incident light intensity input system. The imaging characteristic correction

1 system is controlled on the basis of a result obtained
by the imaging characteristic calculation device.

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